

The personal interview between Examiner Cohen and Examiner Metjahic on January 24, 1996 is appreciated. During the interview, agreement was reached to withdraw the finality of the Official Action dated November 13, 1995. In addition, indication was made that "Examiner agrees that prior art of record fail to disclose downloading software over broadband channel." (see Interview Summary Record). In addition, the undersigned indicated that independent claims 1, 7, 24, 28, and 32 included this feature of downloading software over the broadband channel. Other issues raised during the interview are discussed below.

Claims 1-13, 24-27 and 29-34 stand rejected under 35 U.S.C. § 103 as being unpatentable over Litteral et al., in view of Palazzi, III et al. and Frezza et al. Claims 14-23 stand rejected under 35 U.S.C. § 103 as being unpatentable over Litteral et al. in view of Palazzi, III, et al. Claim 28 stands rejected under 35 U.S.C. § 103 as being unpatentable over Litteral et al. in view of Frezza et al. These rejections are respectfully traversed.

The present invention relates to a digital entertainment terminal for use in receiving digital broadband data via a broadband channel on a communication network. The digital broadband data can carry compressed, digital and audio information that is typically presented to a user, for example, as a real time video program and/or an animated interactive video

program. As discussed in the background portion of the specification, the prior art terminal device functionality is limited to program selection, decoding and display. Thus, assuming a video information provider desired to offer enhanced service, a video user would be required to purchase a new terminal device in order to use the enhanced video service. This problem becomes more severe when a plurality of service providers offer different terminals to accommodate their respective video services.

Thus, a need exists for set top terminal devices which process compressed, broadband digital audio video information and that are readily adaptable to perform a variety of related functionalities as needed to facilitate a range of audio/video and interactive services offered by a large number of information providers.

The present invention provides an arrangement for dynamically programming the digital entertainment terminal to provide a wide range of broadband digital video services from different video service providers. According to the present invention, the digital entertainment terminal downloads software executable by a processor within the digital entertainment terminal in order to control interactions between the user and the selected service provider and to produce audio/video information outputs to the user, responsive to the received

digitized audio and video information. Thus, a digital entertainment terminal can be dynamically programmed to accommodate any broadband video services provided by a video information provider. In addition, the software may be downloaded immediately before reception of the broadband digital video information, thereby enabling a user to automatically receive the downloaded software without the necessity of going through extra steps to upgrade the terminal, for example, requesting software upgrades, or make a separate communication connection via a telephone line.

This feature of controlling the received digitized audio and video information in response to the downloaded software is recited in each of the independent claims 1, 7, 14, 24, 28 and 32. These and other features recited in the independent claims patentably distinguish the claims over the applied references.

Claims 14-23 stand rejected as being rejected under 35 U.S.C. § 103 as being unpatentable over Litteral et al. in view of Palazzi, III et al. As indicated during the interview, neither Litteral et al. nor Palazzi, III et al. disclose, singly or in combination, an audio/video processor comprising means for combining the graphic display information, generated in response to execution of the software (see claim 14, lines 22-23 and 30-32), with the decompressed video signal from the digital broadband channel to "produce a signal for driving a display

device." Thus, the control of the audio/video processor by the control processor during execution of this software enable a graphics display generated by the downloaded software to be combined with the broadband video data received on the digital broadband channel. Applicant appreciates the Examiner's indication that the rejection would be reconsidered in view of this distinction. This audio/video processor controls the received digitized audio and video information in response to the downloaded software as discussed *supra*.

Litteral et al. discloses an enhanced public switched telephone network which also provides a video on demand service to subscribers over the public switch telephone network. A subscriber can request transmission of video data using a telephone by dialing through a voice telephone switch to a voice response unit (VRU) of a video gateway device and dialing in selection information (col. 10, lines 3-24). Alternatively, the user can access the video gateway device and select a video using a remote control device, the set top terminal and the control signalling channel through the network (col. 10, lines 46-68). However, as acknowledged by the Examiner during the interview, Litteral neither discloses nor suggests downloading software, or providing any specialized software necessary to control interactions between the user and the selected service provider

and to produce audio/video information outputs to the user responsive to the received digitized audio and video information.

Thus, Litteral et al. does not contemplate the need for set top terminal devices which process compressed, broadband digital audio and video information and that are dynamically programmable to perform a variety of related functionalities and facilitate a range of audio/video and interactive services offered by a large number of information providers. Further, there is no legitimate showing in the record of a motivation to modify Litteral et al. in order to obtain the claimed invention as a whole. *In re Fritch*, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992) ("mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.") (footnote omitted).

Palazzi, III et al. (and Frezza et al., described below) are non-analogous art because each of the references are not within the field of the inventors' endeavor, namely providing broadband video services to a plurality of subscribers. Further, these two references are not reasonably pertinent to the particular problem with which the inventors were involved, namely providing set top terminal devices which process compressed, broadband digital video audio information and that are readily adaptable to facilitate a range of broadband audio/video and interactive

services offered by a large number of information providers.

Both Palazzi, III et al. and Frezza et al. provide no disclosure or suggestion of using any downloaded software for broadband video and interactive services, and as such are non-analogous art. *In re Wood*, 202 USPQ 171, 174 (CCPA 1979).

Palazzi, III et al. discloses a low data rate terminal that uses a television receiver as the display, instead of a computer monitor, to provide a low-cost terminal for accessing commercial databases, such as Prodigy. According to Palazzi, III et al., the potential end-user of the host database system may have need or desire to purchase a personal computer other than for accessing the database system (col. 2, lines 32-39), and thus, the purchase price of most computers may be a deterrent for the average consumer who might consider subscribing to a commercial database system. Thus, Palazzi, III et al. is limited to providing a low-cost apparatus for accessing commercial database systems, such as Prodigy® travel information, news retrieval or stock quotation indices.

Palazzi, III et al. discloses simply a terminal that connects to a database via a low data rate (1200 baud) modem 4. There is absolutely no interaction between any downloaded software and video information, let alone broadband digital video information. Note that the video switch 9 bypasses the cable/antenna 11 of the television receiver 15 during access to

the database. Nothing sent or received by the 1200 baud modem via the telephone line 1 can be considered video data, let alone broadband video data, since such a data rate is insufficient to provide video services. In fact, the Examiner agreed during the interview that Palazzi et al. is limited to controlling low-bandwidth data signals from commercial database systems.

Therefore, it is submitted that there is no motivation to combine Litteral et al. and Palazzi et al. to obtain the invention in claims 14-23, let alone claims 1-13, 24-27 and 29-34, discussed below, since Palazzi et al. is limited to low-bandwidth data, and not digital video data on a broadband channel.

Assuming Litteral et al. and Palazzi et al. were combined, this hypothetical combination would not provide the claimed invention. Despite the Examiner's assertions to the contrary during the interview, there is no suggestion that combining Litteral et al. (that does not disclose downloading software or controlling broadband digital video data) with Palazzi et al. (that is limited to controlling low-bandwidth data) would result in the claimed downloading software to provide control of broadband digital video data. There has been no showing of a motivation to modify Litteral et al., as required by **In re Fritch**. Thus, the hypothetical combination would use the teachings of Palazzi solely to control interactions with low

rate data signals received via the POTS line, and not broadband digital video data.

Therefore, in view of the claimed audio/video processor, as well as the claimed downloaded software to control the broadband digital video data, claims 14-23 are patentable over the applied references.

Claim 28 stands rejected under § 103 as being unpatentable over Litteral et al. in view of Frezza et al. This rejection is respectfully traversed. As acknowledged during the interview, none of the applied references disclose the claimed (reception of software via the broadband channel,) recited in claim 28 at lines 2-6 and 17-20. Moreover, there is no disclosure or suggestion to (use downloaded software to control broadband data,) discussed *supra* and claimed at lines 28-31. Finally, there is no disclosure or suggestion of (determining if operating system software previously stored in a memory within the digital entertainment terminal is compatible,) as claimed.

The comments regarding Litteral *supra* are incorporated herein by reference. Litteral shows two information providers already. There is no concern of compatibility, since the Litteral system presumes the video data sent by the information providers would already be useable at the subscriber premises. Thus, the asserted motivation to modify is without foundation.

Frezza et al. discloses a CATV system that shares part of its bandwidth with computer database providers such as CompuServe® on a low data rate 128 kbps line. The subscriber terminal includes a subscriber access unit (SAU) 24 having a frequency agile 128 kbps modem (col. 4, lines 47-50) that connects the modem to one of fifty 300 kHz wide channels. A booter 14 downloads the terminal operating system, communications protocol software, display package and user interface software into the random access memory of the terminal (PC 26) each time the terminal is powered up.

Frezza et al. discloses no more than conventional techniques for downloading software into a computer for consumer applications such as home banking, electronic mail and newspapers, shop-at-home, and the like (col. 1, lines 35-48). Frezza et al. merely uses an analog CATV network instead of a telephone network in order to take advantage of unused bandwidth. However, Frezza et al. [neither discloses nor suggests using the downloaded software for control of video information, let alone broadband video data.] Note that a video headend 12 is coupled to the network to transmit analog television signals (col. 3, lines 30-32), and does not interact with any downloaded software.

Thus, Frezza et al. is non-analogous are because it is not directed to the object of the present invention, namely providing improved broadband audio/video and interactive services offered by video information providers providing broadband video.

An evaluation of obviousness must be undertaken from the perspective of one of ordinary skill in the art addressing the same problems addressed by the applicant in arriving at the claimed invention. *Bausch & Lomb, Inc. v. Barnes - Hind/Hydrocurve*, 796 F.2d 443, 449, 230 USPQ 416, 420 (Fed. Cir. 1986), cert. denied, 484 US 823 (1987). Thus, the claimed structures and methods cannot be divorced from the problems addressed by the inventor and the benefits resulting from the claimed invention. *In re Newell*, 891 F.2d 899, 902, 13 USPQ2d 1248, 1250 (Fed. Cir. 1989). Thus, since there is no disclosure or suggestion to modify Litteral et al. to provide the claimed invention, the combination of Litteral et al. with Frezza et al. is improper.

Assuming *arguendo* that Frezza et al. were combined with Litteral et al., the resulting hypothetical combination would provide no more than Litteral et al. having a computer connected to the twisted pair line of Fig. 5 that receives database information from CompuServe® or Prodigy®. Note, however, that the use of the CATV system 8 of Frezza et al. is inconsistent with the video on demand architecture of Litteral et al. Thus,

the resulting hypothetical combination neither teaches nor suggests the claimed invention as a whole, especially since Frezza et al. neither disclose nor suggest in combination the feature of downloading software to control the presentation of broadband digital video data, as claimed. Therefore, independent claim 28 is patentably distinguishable over the hypothetical combination of Litteral et al. and Frezza et al.

Claims 1-13, 24-27 and 29-34 stand rejected under 35 U.S.C. § 103 in view of Litteral, Palazzi, III et al, and Frezza et al. As acknowledged during the interview, none of these references disclose downloading software via the broadband communication link, recited in claims 1, 7, 24, 28, and 32. Thus, the claimed digital entertainment terminal can separate the downloaded software from the broadband video data for execution. Moreover, use of the broadband channel to download software enables a user to receive the software during the same session that the broadband data is received, thereby facilitating the user's viewing of the services provided by the VIP. In addition, use of the broadband channel substantially reduces the time to download the software. Thus, these claims are patentably distinguishable over the hypothetical combination.

Moreover, as discussed above, there is no motivation to modify Litteral et al. with Palazzi, III et al. or Frezza et al. to provide an arrangement for downloading software to control the

digital audio and video information received over the broadband channel. Thus, any hypothetical combination still would not provide this feature. These above arguments are incorporated by reference. For these and other reasons, claims 1-13, 24-27, and 29-34 are patentable over the applied references.

The undersigned respectfully traverses the conclusions of obviousness cited in the Official Action. For example, the conclusion of obviousness on page 4, lines 1-10 of the Official Action is respectfully traversed because mere control is not at issue: it is the control between interactions of the user and the information provider providing the service using the broadband video data. Since neither Litteral et al., Palazzi et al. or Frezza et al., singly or in combination, disclose or suggest controlling the broadband video data using the downloaded software, this conclusion of obviousness is without foundation, such that the Official Action fails to make a *prima facie* case of obviousness for claims 1-34.

As to claims 5 and 8, as discussed on pages 5-6 of the Official Action, Palazzi downloads parameters, and not software, as claimed, especially with respect to claims 1, 7, 24, 28 and 32, which use the broadband channel to download the software.

As to claim 11, the conclusion of obviousness is respectfully traversed because there is no foundation for rewriting over existing software in the memory "in order to

constantly refresh the memory". Besides, refreshing memory results in the same software being stored. The claimed invention, however, enables the newly-downloaded software to provide the user with the services of the second information services provider. Thus, claim 11 is further patentably distinguishable.

The conclusions of obviousness with respect to claims 24 and 25 on page 8 are respectfully traversed. This specified portion of Litteral is mischaracterized because Litteral discloses using a telephone to make a video selection using a voice response unit. The Official Action already admits that Litteral fails to disclose downloading of software. What is downloaded is video data. Therefore, the conclusion of obviousness is without foundation, especially in view of the prior admission in the Official Action that Litteral fails to teach downloading software.

Regarding claims 21-33, discussed on page 16 of the Official Action, the conclusions of obviousness are traversed. The Examiner is respectfully requested to cite evidence that these features of the digital entertainment terminal would have been obvious. See MPEP 2144.03.

Therefore, in view of the above, it is believed the pending claims are patentably distinguishable over the combination of Litteral et al., Palazzi, III et al. and Frezza et al.

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In view of the above, it is believed this application is in condition for allowance. Such a Notice is respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 12-2237 and please credit any excess fees to such deposit account.

Respectfully submitted,

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Date: January 29, 1996